

Internal Characterization of Denture Base by Using Acrylic Stains and Tissue Paper

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Abstract Characterization of an artificial denture is required to give the denture a more natural appearance. This article describes the laboratory procedures for internal characterization of denture base in a removable prosthesis using acrylic stains and absorbent tissue paper incorporated in the heat cure polymerizing denture base resin at the stage of packing.

Keywords Characterization of denture base · Acrylic stains · Tissue paper

Introduction

For the esthetic appearance of an artificial denture, characterization of the denture base material plays a significant role. Contouring and characterization of denture base can contribute to a lifelike appearance. Characterization of denture base, as the word implies is a denture base with coloring that simulates the color and shading of natural oral tissues [1]. Several methods have been used for reproduction of gingival characterization in artificial dentures [2–5]. In the present laboratory technique, absorbent tissue paper is used, which has been advocated for the denture

identification procedure [6]. Its purpose is to carry and retain the acrylic stains in the denture base to obtain desirable characterization in the denture.

A laboratory procedure for characterization of denture base in a removable prosthesis during packing of the heat cure denture base resin using absorbent tissue paper and acrylic stains is described.

Technique

1. Try the waxed-up denture in the patient's mouth. Allow the patient to evaluate the esthetics and obtain the patient's consent if it is satisfactory (Fig. 1).
2. Adapt a strip of tissue paper (Paper Krafting Manufacturing India Private Limited, Pune, Maharashtra, India) over the labial and buccal surface of the waxed-up denture and cut it according to scalloping pattern of the gingival around teeth (Fig. 2).
3. Paint acrylic pigments (MP Sai Enterprises, Mumbai, India) (Fig. 3) over this tissue paper on the labial and buccal gingival region of the denture according to the pigmentation pattern of the patient's gingiva (Fig. 4).
4. Remove the painted tissue paper strip from the waxed-up denture carefully (Fig. 5).
5. Complete the flasking and dewaxing procedure in usual manner. Apply separating medium in the mould (DPI cold mould seal, Dental products of India, Mumbai, India).
6. Check the adaptation of the painted tissue paper by placing and adapting it over the labial and buccal gingival region in the mould space. Remove it again.
7. Adapt a thin layer of heat cure acrylic denture base resin dough (Lucitone 199, Dentsply, York division, Pa.) of about 1 mm on the labial and buccal gingival

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Fig. 1 Waxed-up denture



Fig. 4 Tissue paper painted on the waxed-up denture



Fig. 2 Waxed-up denture with adapted strip of tissue paper



Fig. 5 Painted tissue paper



Fig. 3 Staining kit



Fig. 6 Adapted thin layer of heat cure acrylic resin dough

surface in the mould (Fig. 6). Place the painted tissue paper strip over it and adapt it to the mould and around the neck of acrylic teeth with the help of brush (Fig. 7).

8. Pack rest of the mould space with the heat cure acrylic denture base resin dough and close the flask under clamp.
9. Cure the denture (short curing cycle). Following polymerization, retrieve the denture.
10. Finish and polish the denture in conventional manner (Fig. 8).



Fig. 7 Painted tissue paper strip adapted in the mould



Fig. 8 Finished and polished characterized denture

Discussions

In this technique, the thickness and color of the outer layer of the denture base will affect the extent of tint. The same degree of characterization to that of painted tissue paper can be expected, if thin outer layer of clear/transparent heat cure resin is used. If the outer layer of heat cure denture base resin is pink, the tinting has to be slightly darker on the tissue paper.

The advantages of this technique are that the stains are incorporated deeply in the denture and it will not be easily removed by subsequent grinding procedure during finishing and polishing of the denture. It allows use of separating media over the surface of the mould which prevents impregnation of the plaster into acrylic resin. As the tinting is done directly during the packing of the heat cure denture base resin, it minimizes surface porosities. Characterization

can be appreciated during the staining procedure. The tissue paper is used as a medium to carry the stains during packing of heat cure denture base resin material in the mould space. It helps to retain the pattern and concentration of the stains which results in minimal spread of the colors. The presence of the tissue paper is not obvious, even it remains embedded in the acrylic denture and desired characterization is achieved. Since it is not in a contact with oral fluid, its integrity is maintained. Further studies are required to study the effect of tissue paper embedded inside the acrylic prosthesis on its properties.

Disadvantages are that it requires use of tissue paper and maintaining its position in the denture base is critical. So, one has to be careful during positioning of the tinted tissue paper and packing of heat cure acrylic dough.

Summary

Skillful tinting procedure can produce excellent results, but a poorly executed tinting procedure may, however, ruin an otherwise acceptable denture. This technique describe the method of internal characterization of the denture base by using tissue paper to carry and retain acrylic stains which are incorporated in the denture base at the time of packing stage. Advantages of this method are stains are incorporated deeply in the denture, the operator has a control over extent of the tint, characterization can be appreciated during the staining procedure, and the tinted tissue paper minimizes spread of the colors.

Conflict of interest None.

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